

## **REMARKS**

Claims 1-10 and 27-30 are now pending in the application. Claims 11-25 have been withdrawn as stated during a telephone conversation with Examiner on October 12, 2005. The election of Group I (claims 1-10) is made with traverse.

Claim 1 has been amended to read that the electrode non-uniform loading includes different catalyst coating amounts at an inlet of at least one flow path and an outlet of a flow path adjacent said at least one flow path. Support for the amendment is found throughout the Specification, at least at Paragraphs [0039], [0040], and [0045].

Claims 27-30 are new and are supported throughout the Specification, at least at Paragraphs [0039], [0040], [0045], [0053], and [0054].

Minor amendments have been made to the specification and claims to overcome the objections to the drawings and specification and rejections of the claims under 35 U.S.C. § 112. The amendments to paragraphs [0016], [0039], [0040], and [0052] are in conjunction with the addition of Figure 9B. No new subject matter has been entered in the Specification. The amendments and additions to the claims contained herein are non-narrowing amendments. The Examiner is respectfully requested to reconsider and withdraw the rejections in view of the amendments and remarks contained herein.

### **RESTRICTION REQUIREMENT UNDER 35 U.S.C. § 121**

Restriction was made with respect to the following inventions:

- I. Claims 1-10;
- II. Claims 11-26.

Applicant hereby affirms the election of **Group I, Claims 1-10**, with traverse.

Applicant traverses the restriction requirement because the invention have not been shown to be distinct. The Office Action provides no reasoning to support one-way distinctness in either direction.

Accordingly, the restriction requirement is traversed and examination of all claims is respectfully requested.

#### **DRAWINGS**

The drawings stand objected to under 37 CFR 1.83(a). Applicants have attached one sheet of revised drawings for the Examiner's approval. The attached revised drawings depict an electrode with dot-shaped electrochemically active regions, as in claim 8. Withdrawal and removal of the objection is respectfully requested.

#### **REJECTION UNDER 35 U.S.C. § 112**

Claim 9 stands rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point and distinctly claim the subject matter which Applicant regards as the invention. This rejection is respectfully traversed with regard to amended claim 9.

Applicants have amended claim 9 to recite a Markush group using the language "selected from the group consisting of". Withdrawal and removal of the rejection and reconsideration of claim 9 are respectfully requested.

## **REJECTIONS UNDER 35 U.S.C. § 102**

Claims 1-7, 9, and 10 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Srinivasan et al. (U.S. 2002/0150804).

Srinivasan discloses a scalable all-polymer fuel cell. The fuel cell can include electrodes which are coated with Pt-Ru and Pt catalysts. Srinivasan does not disclose any specific type of catalyst loading, but simply states that “electrodes will be coated” with the catalyst (Paragraph [0062]). Srinivasan does not disclose or otherwise indicate Applicants’ variation in the amount of catalyst loaded on the electrode surface. Applicants respectfully point out that, as depicted in the Srinivasan Figures 1, 4A, and 4B the catalyst coating appears to be evenly and consistently distributed across the surface of the electrodes. Nothing in the Srinivasan publication suggests otherwise. Because Srinivasan does not disclose each and every element of Applicants’ invention, the §102 rejection is improper. Withdrawal of the rejection and reconsiderations of the claims are respectfully requested.

Claims 1, 2, 5, 7-10 stand rejected under 35 U.S.C. § 102(e) as being anticipated by Trabold et al. (U.S. Pat. No. 6,916,573).

Trabold et al. discloses a fuel cell stack without a gas diffusion media. Trabold discloses disposing electrochemically active regions in stripe-shaped or dot-shaped regions (column 6, lines 45 to 50), but does not disclose varying the amount of catalyst loaded on the electrodes as in Applicants amended claims. Because Trabold does not disclose each and every element of Applicants’ invention, the §102 rejection is

improper. Withdrawal of the rejection and reconsideration of the claims as amended are respectfully requested.

Claims 1, 2, 3, 5-7, 9 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Breault (U.S. Pat. No. 4,808,493).

Breault appears to disclose a fuel cell electrode having a non-uniform catalyst loading increasing across the entire surface of the porous substrate of the fuel cell. Breault does not disclose Applicants' claimed invention as amended of varying the catalyst between flow fields such that the catalyst load on the outlet of one flow field is different from the catalyst load on an adjacent flow field. Breault discloses using "multizone catalyst distributions and smooth, monotonically increasing catalyst distributions," column 5, lines 5-7, and further discloses that its graded catalyst loading and current density are relatively uniform across the electrode, column 5, lines 60-65 and Figure 2. Because the Breault patent does not disclose each and every element of Applicants' invention, the §102 rejection is improper. Withdrawal of the rejection and reconsideration of the claims are respectfully requested.

Claims 1, 2, 5-7, 9 stand rejected under 35 U.S.C. 102(b) as being anticipated by Frost et al. (U.S. Pat. No. 5,702,839). This rejection is respectfully traversed.

Frost discloses an electrode for a fuel cell. The electrode may have varied catalyst loading, but the varied catalyst loading is restricted to the catalyst amount at the gas inlet being less than the catalyst amount at the gas outlet. Column 6, lines 48-62; column 8, lines 43 to 49. As stated above, Applicants' claimed invention as amended

requires that the amount of catalyst increase from the gas inlet to the gas outlet and requires that the adjacent flow channels have a different catalyst loads. Because Frost does not disclose each and every element of Applicants' claimed invention as amended, the §102 rejection is improper. Withdrawal of the rejection and reconsideration of the claims are respectfully requested.

#### CONCLUSION

It is believed that all of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Applicant therefore respectfully requests that the Examiner reconsider and withdraw all presently outstanding rejections. It is believed that a full and complete response has been made to the outstanding Office Action and the present application is in condition for allowance. Thus, prompt and favorable consideration of this amendment is respectfully requested. If the Examiner believes that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at (248) 641-1600.

Respectfully submitted,

Dated: January 19, 2006

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### **AMENDMENTS TO THE DRAWINGS**

The attached Replacement Sheet of drawings includes changes to Figure 9 and adds new Figure 9B. The attached "Replacement Sheet" includes Figures 9A and 9B and replaces the original sheets including Figures 9.